

AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A method of performing error diffusion, the method comprising the steps of:
 - simultaneously processing image data for at least two pixels in a row of pixels, said at least two pixels comprising a first group of pixels and a last pixel, said last pixel abutting a group of pixels to be processed next in said row of pixels;
 - reducing the precision of said image data to produce a modified image data word and an error word for each pixel;
 - propagating a portion of said error word for each pixel in said first group to two pixels in a next row of pixels; and
 - propagating a first portion of said error word for said last pixel to a pixel in said next row of pixels and a second portion of said error word for said last pixel to a pixel in said group of pixels to be processed next.
2. (Original) The method of Claim 1 further comprising the steps of:
 - generating a pseudo random number; and
 - wherein said propagating a portion of said error word for each pixel in said first group comprises:
 - dividing said error word into a first and a second portion;
 - subtracting said pseudo random number from said first portion to produce a first modified error word;
 - adding said pseudo random number to said second portion to produce a second modified error word; and
 - adding said first and said second modified error words to image data for a first and second pixel in said next row of pixels.
3. (Original) The method of Claim 2, where said first modified error word is added to image pixel data for a pixel directly below the pixel generating the error signal.
4. (Original) The method of Claim 2, where said second modified error word is added to image pixel data for a pixel directly below and to the right of the pixel generating the error signal.

5. (Original) The method of Claim 1 further comprising the steps of:
generating a pseudo random number; and
wherein said propagating a portion of said error word for each pixel in said second group comprises:
dividing said error word into a first and a second portion;
subtracting said pseudo random number from said first portion to produce a first modified error word;
adding said pseudo random number to said second portion to produce a second modified error word;
adding said first modified error word to image data for a pixel in said next row of pixels; and
adding said second modified error word to image data for a pixel in said group of pixels to be processed next.
6. (Original) The method of Claim 1 further comprising the steps of:
generating a pseudo random number; and
wherein said propagating a portion of said error word for each pixel in said second group comprises:
dividing said error word into a first and a second portion;
adding said pseudo random number to said first portion to produce a first modified error word;
subtracting said pseudo random number from said second portion to produce a second modified error word;
adding said first modified error word to image data for a pixel in said next row of pixels; and
adding said second modified error word to image data for a pixel in said group of pixels to be processed next.
7. (Previously presented) The method of Claim 1 further comprising the steps of:
generating a first and second pseudo random number; and
wherein said propagating a portion of said error word for each pixel in said first

group comprises:

dividing said error word into a first and a second portion;

adding said first pseudo random number to said first portion to produce a first modified error word;

adding said second pseudo random number to said second portion to produce a second modified error word; and

adding said first and said second modified error words to image data for a first and second pixel in said next row of pixels.

8. (Original) The method of Claim 1 further comprising the steps of:

generating a first and second pseudo random number; and

wherein said propagating a portion of said error word for each pixel in said second group comprises:

dividing said error word into a first and a second portion;

adding said first pseudo random number to said first portion to produce a first modified error word;

adding said second pseudo random number to said second portion to produce a second modified error word;

adding said first modified error word to image data for a pixel in said next row of pixels; and

adding said second modified error word to image data for a pixel in said group of pixels to be processed next.

9. (Previously presented) The method of Claim 1 further comprising the steps of:

generating a first pseudo random number; and

wherein said propagating a portion of said error word for each pixel in said first group comprises:

dividing said error word into a first and a second portion;

adding said pseudo random number to said first portion to produce a first modified error word;

subtracting said pseudo random number from said second portion to

produce a second modified error word; and
adding said first and said second modified error words to image data for
a first and second pixel in said next row of pixels.

10. (Original) The method of Claim 1 further comprising the steps of:

generating a first and second pseudo random number; and
wherein said propagating a portion of said error word for each pixel in said
second group comprises:
dividing said error word into a first and a second portion;
adding said first pseudo random number to said first portion to produce
a first modified error word;
subtracting said second pseudo random number from said second
portion to produce a second modified error word;
adding said first modified error word to image data for a pixel in said
next row of pixels; and
adding said second modified error word to image data for a pixel in said
group of pixels to be processed next.

11. (Original) The method of Claim 1 further comprising the steps of:

generating a first and second pseudo random number; and
wherein said propagating a portion of said error word for each pixel in said
second group comprises:
dividing said error word into a first and a second portion;
subtracting said first pseudo random number from said first portion to
produce a first modified error word;
adding said second pseudo random number to said second portion to
produce a second modified error word;
adding said first modified error word to image data for a pixel in said
next row of pixels; and
adding said second modified error word to image data for a pixel in said
group of pixels to be processed next.

12. (Currently amended) A display system comprising:

a controller for receiving and processing pixelated image data said controller:
simultaneously processing image data for at least two pixels in a row of pixels, said at least two pixels comprising a first group of pixels and a last pixel, said last pixel abutting a group of pixels to be processed next in said row of pixels;
reducing the precision of said image data to produce a modified image data word and an error word for each pixel;
propagating a portion of said error word for each pixel in said first group to two pixels in a next row of pixels; and
propagating a first portion of said error word for said last pixel to a pixel in said next row of pixels and a second portion of said error word for said last pixel to a pixel in said group of pixels to be processed next;
a light source for generating a beam of light along a first light path; and
a light modulator for selectively modulating light along said first light path in response to image data signals from said controller.

13. (Original) The display system of Claim 12, said controller:

generating a pseudo random number; and
wherein said propagating a portion of said error word for each pixel in said first group comprises:
dividing said error word into a first and a second portion;
subtracting said pseudo random number from said first portion to produce a first modified error word;
adding said pseudo random number to said second portion to produce a second modified error word; and
adding said first and said second modified error words to image data for a first and second pixel in said next row of pixels.

14. (Original) The display system of Claim 12, said controller:

generating a pseudo random number; and

wherein said propagating a portion of said error word for each pixel in said second group comprises:

- dividing said error word into a first and a second portion;
- subtracting said pseudo random number from said first portion to produce a first modified error word;
- adding said pseudo random number to said second portion to produce a second modified error word;
- adding said first modified error word to image data for a pixel in said next row of pixels; and
- adding said second modified error word to image data for a pixel in said group of pixels to be processed next.

15. (Original) The display system of Claim 12, said controller:

- generating a pseudo random number; and
- wherein said propagating a portion of said error word for each pixel in said second group comprises:

- dividing said error word into a first and a second portion;
- adding said pseudo random number to said first portion to produce a first modified error word;
- subtracting said pseudo random number from said second portion to produce a second modified error word;
- adding said first modified error word to image data for a pixel in said next row of pixels; and
- adding said second modified error word to image data for a pixel in said group of pixels to be processed next.

16. (Previously presented) The display system of Claim 12, said controller:

- generating a first and second pseudo random number; and
- wherein said propagating a portion of said error word for each pixel in said first group comprises:
 - dividing said error word into a first and a second portion;

adding said first pseudo random number to said first portion to produce a first modified error word;

adding said second pseudo random number to said second portion to produce a second modified error word; and

adding said first and said second modified error words to image data for a first and second pixel in said next row of pixels.

17. (Original) The display system of Claim 12, said controller:

generating a first and second pseudo random number; and

wherein said propagating a portion of said error word for each pixel in said second group comprises:

dividing said error word into a first and a second portion;

adding said first pseudo random number to said first portion to produce a first modified error word;

adding said second pseudo random number to said second portion to produce a second modified error word;

adding said first modified error word to image data for a pixel in said next row of pixels; and

adding said second modified error word to image data for a pixel in said group of pixels to be processed next.

18. (Original) The display system of Claim 12, said controller:

generating a first and second pseudo random number; and

wherein said propagating a portion of said error word for each pixel in said first group comprises:

dividing said error word into a first and a second portion;

adding said pseudo random number to said first portion to produce a first modified error word;

subtracting said pseudo random number from said second portion to produce a second modified error word; and

adding said first and said second modified error words to image data for

a first and second pixel in said next row of pixels.

19. (Original) The display system of Claim 12, said controller:

generating a first and second pseudo random number; and

wherein said propagating a portion of said error word for each pixel in said second group comprises:

dividing said error word into a first and a second portion;

adding said first pseudo random number to said first portion to produce a first modified error word;

subtracting said second pseudo random number from said second portion to produce a second modified error word;

adding said first modified error word to image data for a pixel in said next row of pixels; and

adding said second modified error word to image data for a pixel in said group of pixels to be processed next.

20. (Original) The display system of Claim 12, said controller:

generating a first and second pseudo random number; and

wherein said propagating a portion of said error word for each pixel in said second group comprises:

dividing said error word into a first and a second portion;

subtracting said first pseudo random number from said first portion to produce a first modified error word;

adding said second pseudo random number to said second portion to produce a second modified error word;

adding said first modified error word to image data for a pixel in said next row of pixels; and

adding said second modified error word to image data for a pixel in said group of pixels to be processed next.